CLAIMS

1. Metal detector comprising transmitting coils, receiving coils and an electronic processing circuit (30) adapted to detect variations in signals received by the receiving coils in relation to a reference value,

5 characterised in that it also includes a test module comprising selection means (40) for detecting a test request, and control means (50), used when a test request by the selection means (40) is detected, for comparing the signals from the receiving coils, at the time of the

10 subsequent passing of a standard reference object through the detector, with a predetermined response.

2. Detector according to Claim 1, characterised in that the standard reference object is a metal sphere.

3. Detector according to one of Claims 1 or 2,

15 characterised in that the test module is adapted to carry out control operations for each of the detector's channels.

4. Detector according to one of Claims 1 to 3, characterised in that the selection means (40) are

20 selected in the group comprising: a protected access button, a card reader, a detector of a code entered on a keyboard.

5. Detector according to one of Claims 1 to 4, characterised in that the selection means (40) are

25 adapted to load and use a control programme specific to the request detected.

6. Detector according to one of Claims 1 to 5, characterised in that the selection means (40) are adapted to load and use a control programme specific to

the request detected, selected from several available control programmes.

7. Detector according to one of Claims 1 to 6, characterised in that the selection means (40) are adapted to load and use a control programme specific to the request detected, selected from 3 available control programmes: 1) an automatic test and recalibration procedure for the detection parameters if necessary, 2) a full test procedure and 3) a simple and quick test procedure.

8. Detector according to one of Claims 1 to 7, characterised in that the control means (50) comprise a display module (52), a recording module (54), a comparison module (56), an output module (58) and a central processing unit (59) which controls the assembly.

9. Detector according to Claim 8, characterised in that the display module (52) is adapted to send signals guiding the operator in the sequencing of the test programme.

10. Detector according to one of Claims 8 or 9, characterised in that the display module (52) is adapted to give signals to proceed with passing the standard reference object through, interrupting this passage, and possibly repeating the procedure at a different height.

11. Detector according to one of Claims 8 to 10, characterised in that the display module (52) is adapted to give signals indicating the height at which the standard reference object must be moved.

12. Detector according to one of Claims 8 to 11, characterised in that the output means (58) provide an output signal representative of the test result.

13. Detector according to one of Claims 8 to 12, characterised in that the output means (58) are adapted to modify the detection parameters if the signals detected from the receiving coils do not fall within a given predetermined response tolerance range in the context of a calibration request.

14. Detector according to Claim 13, characterised in that the test module is adapted to carry out calibration operations for each of the detector's channels.

15. Test procedure for metal detectors characterised in that it includes, after a stage (60) of sending a test request, stages comprising passing a known standard reference object through the detector (72, 82, 92), and comparing (76, 86, 96) the signals from the receiving coils at the time of this passing, with a predetermined response.

16. Procedure according to Claim 15, characterised in that the standard reference object is a metal sphere.

17. Procedure according to one of the Claims 15 to 16, characterised in that the test request sending stage (60) comprises the selection from several available programmes.

18. Procedure according to one of Claims 15 to 17, characterised in that the test request sending stage (60) comprises the selection from three available programmes: 1) an automatic test and recalibration procedure for the detection parameters if necessary, 2) a full test procedure and 3) a simple and quick test procedure, as will be shown in more detail later.

19. Procedure according to one of Claims 15 to 18, characterised in that it comprises sending signals (72,

82, 92) guiding the operator in the sequencing of the test programme.

20. Procedure according to one of Claims 15 to 19, characterised in that it comprises sending signals (72, 82, 92) indicating the height at which the standard reference object must be moved.

21. Procedure according to one of Claims 15 to 20, characterised in that it comprises a stage (792) consisting of modifying the detection parameters if the signals detected from the receiving coils do not fall within a given predetermined response tolerance range.

22. Procedure according to Claim 21, characterised in that the modification stage (792) consists of modifying the amplification factor of the signals from the receiving coils.

23. Procedure according to one of Claims 15 to 22, characterised in that it includes a calibration procedure (70) comprising a single passing through of the reference object, at floor level.

24. Procedure according to one of Claims 15 to 23, characterised in that it includes a test procedure (80, 90) consisting of carrying out several successive passes of the reference object, at different heights.

25. Procedure according to Claim 24, characterised in that a test procedure (80) comprises four successive passes of the reference object, at different heights.

26. Procedure according to one of Claims 24 or 25, characterised in that a test procedure (90) comprises two successive passes of the reference object, at different heights.

27. Procedure according to one of Claims 15 to 26, characterised in that the trajectory of the standard

reference object is a rectilinear trajectory (T) and at a constant height for each respective pass.

28. Procedure according to one of Claims 15 to 27, characterised in that the trajectory of the standard reference object is effected halfway between two panels (20, 22) making up the detector.